WHAT IS CLAIMED IS:

1. An isolated nucleic acid molecule comprising a nucleotide sequence selected from the group consisting of:

(a) the nucleotide sequence as set forth in SEQ ID NOS: 1 or 3;

(b) a nucleotide sequence encoding the polypeptide as set forth in SEQ ID NOS: 2 or 4;

(c) a nucleotide sequence corresponding to nucleotide position number 181 to 795 in SEQ ID NO:1 or nucleotide position number 15 to 629 in SEQ ID NO:3;

(d) a nucleotide sequence encoding a polypeptide that is at least about 80, 85, 90, 95, 96, 97, 98, or 99 percent identical to the nucleotide sequence of (c);

(e) an allelic variant or splice variant of any of (a), (b, (c) or (d);

(f) a nucleotide sequence of (b), (c), (d) or (e) encoding a polypeptide fragment of at least about 25, 50, 75, 100, or greater than 100 amino acid residues wherein the polypeptide fragment has an activity of regulating JNK activation or modulating JNK-mediated signal transduction;

(g) a nucleotide sequence of (a), (b), (c) or (d) comprising a fragment of at least about 10, 15, 20, 25, 50, 75, 100, or greater than 100 nucleotides;

(h) a nucleotide sequence encoding a polypeptide that has a substitution and/or deletion of 1 to 100 amino acid residues as set forth in any of SEQ ID NOS: 2 or 4 wherein the polypeptide has an activity of regulating JNK activation or modulating JNK-mediated signal transduction; or serves as an antigen for generating antibodies; and

(i) a nucleotide sequence which hybridizes under stringent conditions to any of (a) – (h);

(j) a nucleotide sequence complementary to any of (a) – (h).

2. An expression vector comprising the nucleic acid molecule of Claim 1.

3. A host cell comprising the expression vector of Claim 2.

4. The host cell of Claim 3 which is a eucaryotic cell.

5. The host cell of Claim 3 which is a prokaryotic cell.

6. A process for producing a protein comprising growing a culture of the host cell of Claim 3 in suitable culture medium and isolating the protein from the culture.

7. A polypeptide produced by the process of Claim 6.

8. An isolated polypeptide comprising the amino acid sequence selected from the group consisting of:

(a) the amino acid sequence as set forth in SEQ ID NOS: 2 or 4;

(b) a fragment of the amino acid sequence set forth in SEQ ID NOS: 2 or 4 comprising at least about 25, 50, 75, 100, or greater than 100 amino acid residues wherein the fragment has an activity of regulating JNK activation or modulating JNK-mediated signal transduction; or serves as an antigen for generating antibodies;

(c) an ortholog of SEQ ID NOS: 2 or 4; and

(d) an allelic variant or splice variant of (a), or (c).

9. An isolated polypeptide encoded by the nucleic acid molecule of Claim 1.

10. An antibody or fragment thereof that specifically binds the polypeptide of Claim 8.

11. The antibody of Claim 10 that is a monoclonal antibody.

12. A fusion polypeptide comprising the polypeptide of Claim 8 fused to a heterologous amino acid sequence.

13. The fusion polypeptide of Claim 12 wherein the heterologous amino acid sequence is an IgG constant domain or fragment thereof.

14. A method of diagnosing a JNK-mediated disorder or a susceptibility to a JNK-mediated disorder in a subject comprising:

(a) determining the presence or amount of expression of the polypeptide of Claim 8 or the polypeptide encoded by the nucleic acid molecule of Claim 1 in a sample; and

(b) diagnosing a JNK-mediated disorder or a susceptibility to a JNK-mediated disorder based on the presence or amount of expression of the polypeptide.

15. A method of identifying a compound which binds to a polypeptide comprising:

(a) contacting the polypeptide of Claim 8 with a compound; and

(b) determining the extent of binding of the polypeptide to the compound.

16. A method of modulating levels of a polypeptide in an animal comprising administering to the animal the nucleic acid molecule of claim 1.

17. An antibody produced by immunizing an animal with a peptide comprising an amino acid sequence of SEQ ID NO: 22.

18. A process for determining whether a compound inhibits JNK activating phosphatase polypeptide activity comprising exposing a cell according to Claim 3 to the compound, and measuring JNK activating phosphatase polypeptide activity in said cell.

19. A method for producing the JNK-activating phosphatase comprising the amino acid sequence depicted in SEQ ID NOS: 2 or 4, said method comprising:

(a) culturing the host cell of claim 3 under conditions suitable for the expression of JNK-activating phosphatase; and

(b) recovering JNK-activating phosphatase.

20. An isolated JNK-activating phosphatase protein having an amino-terminal dual-specificity phosphatase domain and lacking a noncatalytic carboxy-terminal domain; said protein having functional activities comprising dual-specificity phosphatase activity and JNK pathway upregulation activity.

21. A method for screening a compound for the ability to augment JNK-activating phosphatase activity in a host cell comprising

(a) contacting said compound with a host cell of claim 3; and

(b) determining the ability of said compound to modulate the JNK-activating phosphatase activity of said host cell, wherein a difference in said activity in the presence of said compound is indicative of modulation activity by said compound.